Notice of Allowability	Application No.	Applicant(s)	
	10/725,492	JU, BEOM-JUN	
	Examiner	Art Unit	
	Disler Paul	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.

2. ☒ The allowed claim(s) is/are *1-14*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Response to Amendment

This office action is in response to the applicant's Amendment of added to the rejected claims 1 wherein the further limitation of the resistor is serially provided before each respective buffer and furthermore the pair of parallel resistors connected in parallel to the serial resistors that are inserted between an output of end of each of the FETS and an input end of each of the buffers. The examiner considers such added limitations and agrees that such limitation is patentable over the prior art.

Also the new added claims have also considered and the examiner have found no subject matter added.

Allowable Subject Matter

Re claims 1-2, Asakura et al.("US 6,681,018 B1") and Yoshida ("US 5,321,671") as a whole disclose a channel down mixing apparatus for a car audio system, which has a channel down mixing function for down mixing a sub-woofer signal to an L (left) channel and an R (right) channel when a user does not select a sub-woofer speaker, the apparatus comprising: a pair of buffers that amplifies an L (left) channel input signal and an R (right) channel input signal to a designated gain; a pair of FETs that mixes the

sub-woofer signal with the L channel input signal and the R channel input signal when the user does not select the sub-woofer speaker, and outputs a mixed signal to each of the buffers; a first transistor being turned on when the user turns on the sub-woofer speaker; and a second transistor and a third transistor, which are turned off when the first transistor is turned on and turned off when the first transistor is turned on.

However, the combined teaching of Asakura et al. and Yoshida fail to disclose of a resistor is serially inserted before the respective buffers; a pair of parallel resistors connected in parallel to the serial resistors that are inserted between an output end of each of the FET and an input end of the buffer; wherein the second and third transistors earth each of the parallel resistors when turned on, thereby reducing the level of the L channel input signal and the R channel input signal by a resistance ratio of the serial resistor to the parallel resistor.

Therefore, in view of the missing limitation above, the independent claims 1-2 are allowable.

Furthermore the added new claims which no new subject matter have bee found and are also allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP

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SUPERVISORY PATENT EXAMINER
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